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EXAMINER				
KIM, EDWARD J				
ART UNIT		PAPER NUMBER		
2455				
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary

Application No.

10/530,420

Applicant(s)

RADULESCU ET AL.

Examiner

EDWARD J. KIM

Art Unit

2455

Period for Reply
-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 December 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-9 is/are pending in the application.
- 4a) Of the above claim(s) 2 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 3-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-940)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

1. This office action is in response to the amendment filed on 12/30/2010.
2. Claims 1 and 3-9 are pending in this office action. Claim 2 has been cancelled by the Applicant. Claims 1, 3, 4, and 6-9 have been amended. No new claims have been added.

Response to Amendment

3. The Examiner withdraws previous 35 USC 101 rejections.

Response to Arguments

4. Applicant's arguments with respect to all pending claims have been considered but are moot in view of the new ground(s) of rejection.

Claim Objections

5. Claim 3, 4, and 8 are objected to because of the following informalities:

Claim 4 recites "...maps multicast addresses reference...", wherein a grammatical error exists (regarding plural). Appropriate correction is required.

Claim 3 recites, "wherein the facility for mapping prevents mapping the at least one multicast address reference onto the same address in the address space as the at least one second multicast address" and claim 8 recites, "wherein the facility for mapping prevents mapping the at least one first multicast address reference onto the same address in the address space as two or more multicast addresses associated with the same second electronic modules", wherein both

claims are in dependent for of claim 1. The claimed subject matter appears to be duplicated.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claim 3 recites the limitation "onto the same address in the address space as the at least one second multicast address". There is insufficient antecedent basis for the underlined limitation in the claim and the parent claim.

8. Claims 3, 4, 8, and 9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 3 recites, "wherein the facility for mapping prevents mapping the at least one multicast address reference onto the same address in the address space as the at least one second multicast address" (refer to lack of antecedent basis rejection above for the underlined limitation), however, the parent claim 1 recites, "an address space and facility for mapping the at least one multicast address reference onto a plurality of address space addresses...associated with the addresses of one of the second electronic modules". Therefore, claim 3 is contradicting claim 1, since claim 3 recites that the multicast address reference cannot be mapped onto the second address, whereas claim 1 recites that the multicast address reference is mapped onto the

address of second electronic modules. Given the broadest most reasonable claim interpretation, the claim will be interpreted as wherein the multicast address reference is mapped to a range of addresses wherein there exists another set of second multicast addresses.

Claim 4 recites, “the facility for mapping maps multicast addresses reference onto ranges of addresses in the address space”, wherein the parent claim 1 recites, “an address space and a facility for mapping the at least one multicast address reference onto a plurality of address space addresses in a range of addresses of the address space”. According to the claim language, claim 4 is repeating the limitation already claimed in the parent claim, claim 1, wherein claim 4 fails to further limit the parent claim. It is unclear whether claim 4 is referring to something different. Therefore, claim 4 is indefinite to what the exact claimed subject matter is.

Claim 8 recites, “wherein the facility for mapping prevents mapping the at least one first multicast address reference onto the same address in the address space as two or more multicast addresses associated with the same second electronic modules”, wherein parent claim 1 recites “an address space and facility for mapping the at least one multicast address reference onto a plurality of address space addresses...associated with the addresses of one of the second electronic modules”. Therefore, claim 8 is contradicting the limitations of claim 1. Given the broadest most reasonable claim interpretation, the claim will be interpreted as wherein the multicast address reference is mapped to a range of addresses wherein there exists another set of second multicast addresses.

Claim 9 recites, “the facility for mapping is arranged for further mapping at least one range of addresses to the plurality of second electronic modules”, wherein parent claim 1 recites “an address space and facility for mapping the at least one multicast address reference onto a plurality of address space addresses...associated with the addresses of one of the second electronic modules”. According to the claim language, claim 9 is repeating the limitation already claimed in the parent claim, claim 1, wherein claim 4 fails to further limit the parent claim. It is unclear whether claim 9 is referring to different subject matter or not. Therefore, claim 9 is indefinite to what the exact claimed subject matter is.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 1, 3, 4, and 6-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ross et al. (“4.8 Multicast Routing” 06/14/2002), hereinafter referred to as Ross, in view of O’Toole et al. (US Patent #7,117,273 B1), hereinafter referred to as O’Toole.

Regarding claim 1, Ross discloses a first electronic module and a plurality of second electronic modules arranged to communicate to each other via the network, the network is arranged to establish transactions between a first electronic module and at least two second electronic modules (Ross, pg.375 under the heading 4.8 Multicast Routing. Ross discloses

network that utilizes multicast: the sending of a packet from one sender to multiple receivers with a single send operation.), comprises:

network interface device for receiving a single request including at least one multicast address reference from the first electronic module, replicating the single request into at least two replicated requests, and sending each of the at least two replicated requests to the respective second electronic modules (Ross, pg.375 under the heading 4.8 Multicast Routing. Ross discloses network that utilizes multicast: the sending of a packet from one sender to multiple receivers with a single send operation. Ross, pg.376, fig.4.47, 4.48. Ross discloses two scenarios wherein, (1) Application-level multicast: sender transmits one copy wherein the receivers duplicate and forward to other group of receivers (2) Explicit multicast: sending host sends a single datagram, wherein a network router replicates the datagram to be transmitted to a group of receivers.); and

an address space and a facility for mapping the at least one multicast address reference onto a plurality of address space addresses in a range of addresses of the address space, each range is associated with addresses of one of the second electronic modules (Ross, pg.378, fig.4.48. Ross discloses examples wherein a multicast group address are associated with a range of addresses of receivers. Ross, pg.379, under the title "4.8.2 IGMP" - Ross further discloses details of methods that allow such a system to be realized, that facilitates how a group of receivers are associated with a multicast address.),

wherein each of the at least two replicated requests is sent by the network interface to the second electronic modules using its associated range of addresses of the address space (Ross, pg.378, fig.4.48. Ross discloses examples wherein a multicast group address are associated with

a range of addresses of receivers, wherein data sent to the multicast group address is replicated and forwarded to a group of receivers that are associated with the multicast group address. Ross, pg.376, fig.4.47. Ross disclose that this scenario can be used in “Explicit multicast”: wherein the sending host sends a single datagram, wherein a network router replicates the datagram to be transmitted to a group of receivers.).

However, Ross fail to explicitly disclose an integrated circuit comprising a network comprising the above network. O’Toole discloses method and apparatus for maintaining a map of node relationships for a network, wherein the system utilizes multicasting (O’Toole, Abstract, col.17 ln.50- col.18 ln.63). O’Toole further discloses that such networks that employs multicasting can be implemented on Integrated Circuits (IC) (O’Toole , col.6 ln.1-15.). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Ross with those of O’Toole to implement the system disclosed by Ross on an Integrated Circuit. One would have been motivated to do so since such multicasting network topologies/systems were copied implemented ICs for efficiency in an IC system, as evidenced by O’Toole.

Regarding claim 3, Ross disclosed the limitations as described in claim 1, and further discloses wherein the facility for mapping prevents mapping the at least one multicast address reference onto the same address in the address space as the at least one second multicast address (Ross, pg.376, fig.4.48 – Ross discloses “Application-level multicast” wherein a copy of data is transmitted via multicast to a group of receivers, wherein the receivers duplicates and forwards

to yet additional group of receivers via multicast. Refer to 35 USC 112 second paragraph rejection above regarding claim interpretation.).

Regarding claim 4, Ross disclosed the limitations as described in claim 1, and further discloses wherein the facility for mapping maps multicast addresses reference onto ranges of addresses in the address space (Ross, pg.378, fig.4.48. Ross discloses examples wherein a multicast group address are associated with a range of addresses of receivers. Ross, pg.379, under the title “4.8.2 IGMP” - Ross further discloses details of methods that allow such a system to be realized, that facilitates how a group of receivers are associated with a multicast address.).

Regarding claim 6, Ross disclosed the limitations as described in claim 1, and further discloses wherein the network interface device comprises a circuit for performing the replication of the single request into the replicated requests, and sending the replicated requests to the second electronic modules Ross, pg.376, fig.4.47, 4.48. Ross discloses “Explicit multicast”: sending host sends a single datagram, wherein a network router replicates the datagram to be transmitted to a group of receivers.).

Regarding claim 7, Ross discloses a method for shifting a burden of sending requests to a network interface device comprising a network, a first electronic module and plurality of second electronic modules, which communicate with each other via the network, the method further establishes transactions between the first electronic module and at least two second electronic modules (Ross, pg.375 under the heading 4.8 Multicast Routing. Ross discloses network that

utilizes multicast: the sending of a packet from one sender to multiple receivers with a single send operation.), the method comprising acts of:

on the network interface device: receiving a single request including at least one multicast address reference from the first electronic module, replicating the single request into at least two replicated requests, and sending each of the replicated requests to the respective second electronic modules (Ross, pg.375 under the heading 4.8 Multicast Routing. Ross discloses network that utilizes multicast: the sending of a packet from one sender to multiple receivers with a single send operation. Ross, pg.376, fig.4.47, 4.48. Ross discloses two scenarios wherein, (1) Application-level multicast: sender transmits one copy wherein the receivers duplicate and forward to other group of receivers (2) Explicit multicast: sending host sends a single datagram, wherein a network router replicates the datagram to be transmitted to a group of receivers.); and

on an address space and a facility for mapping the at least one multicast address reference onto a plurality of the address space addresses in a range of addresses of the address space, each range is associated with addresses of one of the second electronic modules (Ross, pg.378, fig.4.48. Ross discloses examples wherein a multicast group address are associated with a range of addresses of receivers. Ross, pg.379, under the title "4.8.2 IGMP" - Ross further discloses details of methods that allow such a system to be realized, that facilitates how a group of receivers are associated with a multicast addresss.),

wherein each of the replicated requests is sent to the second electronic modules using its associated range of addresses of the address space (Ross, pg.378, fig.4.48. Ross discloses examples wherein a multicast group address are associated with a range of addresses of

receivers, wherein data sent to the multicast group address is replicated and forwarded to a group of receivers that are associated with the multicast group address. Ross, pg.376, fig.4.47. Ross disclose that this scenario can be used in “Explicit multicast”: wherein the sending host sends a single datagram, wherein a network router replicates the datagram to be transmitted to a group of receivers.).

However, Ross fail to explicitly disclose an integrated circuit comprising a network comprising the above network. O’Toole discloses method and apparatus for maintaining a map of node relationships for a network, wherein the system utilizes multicasting (O’Toole, Abstract, col.17 ln.50- col.18 ln.63). O’Toole further discloses that such networks that employs multicasting can be implemented on Integrated Circuits (IC) (O’Toole , col.6 ln.1-15.). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Ross with those of O’Toole to implement the system disclosed by Ross on an Integrated Circuit. One would have been motivated to do so since such multicasting network topologies/systems were copied implemented ICs for efficiency in an IC system, as evidenced by O’Toole.

Regarding claim 8, Ross disclosed the limitations as described in claim 1, and further discloses wherein the facility for mapping prevents mapping the at least one first multicast address reference onto the same address in the address space as two or more multicast addresses associated with the same second electronic modules (Ross, pg.376, fig.4.48 – Ross discloses “Application-level multicast” wherein a copy of data is transmitted via multicast to a group of receivers, wherein the receivers duplicates and forwards to yet additional group of receivers via

multicast. Refer to 35 USC 112 second paragraph rejection above regarding claim interpretation.)

Regarding claim 9, Ross disclosed the limitations as described in claim 1, and further discloses wherein the facility for mapping is arranged for further mapping at least one range of addresses to the plurality of second electronic modules (Ross, pg.378, fig.4.48. Ross discloses examples wherein a multicast group address are associated with a range of addresses of receivers.).

11. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ross et al. ("4.8 Multicast Routing", 06/14/2002), hereinafter referred to as Ross, in view of O'Toole et al. (US Patent #7,117,273 B1), hereinafter referred to as O'Toole, further in view of Shobatake (US Patent #6,772,219 B1).

Regarding claim 5, Ross disclosed the limitations as described in claim 1, however, fails to explicitly disclose wherein the single request comprises a connection identifier for identifying a multicast connection, wherein the multicast connection includes at least one of guaranteed throughput, latency and jitter, ordered delivery, and flow control.

Shobatake discloses message relay device for constructing a ultra-high speed message relaying system, which utilizes multicast connections and connection identifiers (Shobatake, Abstract, col.2 ln.30-39, col.64 ln.25-60). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Ballardie, with those of Shobatake to utilize multicast connections that guaranteed throughput, or latency and jitter, or

ordered delivery, or flow control, and connection identifiers. One would have been motivated to do so, since Shobatake discloses a method and system that provides a solution for the difficulty in realized a high throughput network, especially in a network providing multicast connections (Shobatake, col.2 ln.30-39).

Conclusion

12. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to EDWARD J. KIM whose telephone number is (571)270-3228. The examiner can normally be reached on Monday - Friday 7:30am - 5:00pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rupal Dharja can be reached on 571-272-3880. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Edward J Kim/
Examiner, Art Unit 2455

/David Lazaro/
Primary Examiner, Art Unit 2455